

# Kansas Cancer Control Plan

## Part I

### Problem Definition, Burden of Disease, and Health Objectives

#### A Report of the Kansas Cancer Partnership

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This document attempts to faithfully represent consensus work of the Kansas Cancer Partnership. Consequently, all of the consensus opinions and decisions reported in this document do not necessarily reflect the opinions and decisions of KDHE, which acted as convener and editor.

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# Kansas Support of Statewide Consensus on Health Issues

## Developing Consensus

Forming a consensus process around a health issue is an important step toward achieving reductions in morbidity, mortality, and health disparity. Although the approach may vary from one process to another, a consensus process typically seeks to achieve some or all of the purposes outlined in the adjacent table.

The Kansas Cancer Partnership was convened at the request of the Kansas Department of Health and Environment (KDHE), and was charged with the task of developing a comprehensive cancer control plan for the state. The strategies identified for the Partnership to accomplish its mission were as follows:

1. Foster collaboration for primary, secondary, and tertiary/palliative care, thereby reducing duplication of services and optimizing resources;
2. Identify gaps in services, information and data;
3. Reduce disparities in cancer screening and management;
4. Enhance access to quality treatment and support services; and
5. Identify and implement priorities and strategies to evaluate outcomes.

### Possible Reasons for Conducting a Consensus Processes

1. Create a shared understanding of the problem and current efforts to solve it;
2. Assign uniform definitions for measuring the problem;
3. Identify populations at risk;
4. Identify measurable indicators that include baseline and target values;
5. Identity data resources and data deficiencies;
6. Assign priority to health problems;
7. Identify effective, practicable, and culturally appropriate strategies;
8. Define roles and responsibilities;
9. Facilitate strategic partnerships and joint action.

## The Planning Process

In the summer of 1999, the first planning meeting was held to identify goals for the process and begin identifying potential partners. By fall of 1999 the Kansas Cancer Partnership was formed with 60 members. First the partnership defined its task and procedures including diseases and crosscutting issues to be focused on. Second, workgroups were formed with each participant electing to be part of one cancer specific workgroup: lung, breast, cervical, colorectal, skin, or prostate. A facilitator and health scientist staffed each workgroup. The health scientist

### Vision

The Kansas Cancer Partnership is an integrated network of organizations and individuals that will provide statewide leadership in developing a coordinated, comprehensive, cancer control plan.

### Mission

The Kansas Cancer Partnership will focus on the reduction of cancer incidence, morbidity and mortality for all Kansans through research, prevention, early detection, treatment, rehabilitation, and palliation.

prepared the group for its task by presenting the clinical and epidemiological characteristics of the cancer and the research needed to understand the unmet public health problems.

The groups met over the course of the subsequent twelve months, using prepared worksheets to guide the consensus building needed to identify priority health issues, measurable objectives, and recommended actions. Staff coordinators extracted recommendations from worksheets and delivered these to KDHE epidemiologists to begin the task of finding data to measure objectives for the Kansas population and sub-populations with possible disparities.

### **Selection of Priority Cancer Areas**

Participants identified six cancer sites as the primary targets of the process. These sites - lung, colorectal, cervical, breast, prostate and skin - were selected based on frequency and severity of the disease and availability of prevention or early diagnosis options that could reduce morbidity and mortality. In addition, the initial planning process defined the key cross cutting issues that would need to be addressed for both specific cancers and cancer care. These crosscutting issues were as follows:

1. Disparity - differences in the burden of disease or access to services whether based on age, sex, race, ethnicity, geography, income or other measurable factors;
2. Data - ability to measure disease morbidity and mortality, access to care, and effectiveness of intervention;
3. Education - knowledge and training needed by both patients and health care professionals to adequately manage cancer and cancer risk;
4. Prevention - the reduction of cancer incidence through risk factor reduction;
5. Diagnosis and treatment - timely disease detection followed by prompt delivery of the best available therapeutics;
6. Recovery - the psychosocial and economic reintegration of persons with cancer back into normal life following treatment;
7. Palliation - non-curative (mitigating) therapy intended to improve the quality of life and functional capabilities of persons living with cancer;
8. Policy and resources - societal decision making and allocation of money to ensure that cancer risk, occurrence, suffering and death are minimized for all Kansans; and
9. Research - creation of new knowledge and new tools for cancer risk reduction and cancer care.

### **Interpretation of Consensus Documents**

Consensus does not mean unanimous agreement, but rather, general agreement. For this planning process, the goal for consensus was 80% agreement. Consequently, it is possible that an individual workgroup participant might have disagreed with a position taken by the other workgroup participants while still supporting the process. Because consensus does not imply unanimity, because not all organizations were represented on all workgroups, and because participants may or may not have represented the official position of the organization to which they belong, it is not

assumed that this document fully reflects the values and beliefs of every participant and every participating organization.

In order to formulate a practical response to cancer, workgroups were requested to define problems and propose solutions by beginning with known facts. However, complete data that could fully define the problem were rarely available. (Identifying these data gaps was one of the workgroup tasks.) For instance, the prostate cancer workgroup had no information on the extent to which health care providers understood the risks and benefits of treating localized prostate cancer; nonetheless, the group reached a consensus that providers would need ongoing professional education in order to adequately counsel their patients about this complex topic. The process drew upon the working knowledge of the participants to make assumptions that were needed to make useful recommendations.

### **Editorial Process**

Editing this document included the following tasks:

1. Presenting the findings of the workgroups in a uniform format;
2. Identifying data for objectives and sub-objectives; and
3. Writing the background information related to each cancer.

In the process of completing this document, KDHE has sought to accurately represent the material provided to it by the work groups. The few substantive changes to workgroup conclusions that were made by the editors are as follows:

1. End-of-life indicators were removed from the cancer specific areas into a chapter of their own.
2. The first two indicators for skin cancer were narrowed to include only melanoma skin cancer rather than all skin cancer. This change was made because mortality from basal cell and squamous cell carcinomas of the skin is very low, and the cancer registry has no data on non-melanoma skin cancers.
3. Disparate populations were defined as demographically identifiable populations with a burden of disease or health outcome worse than that found in the general population. Because white, non-Hispanic persons have the greatest disparity for skin cancer, they were added as a disparate population in the chapter on skin cancer.
4. The indicator for smokeless tobacco was excluded from the chapter on lung cancer.
5. A proposed objective to increase use of aspirin to prevent colorectal cancer was excluded. In the time since the work groups met, cost-benefit research has tended not to validate this as a scientifically supported, prevention strategy for colorectal cancer.

### **Definitions**

1. *In-situ* : A term which means literally “in place.” It describes cells which appear malignant on microscopic exam, but which have not spread into neighboring tissues. For epithelial tumors, this means that the cells have not crossed the basement membrane below the epithelium. Theoretically, until an epithelial tumor crosses the basement membrane, it cannot get access to lymphatic

vessels or blood vessels to metastasize. The natural history of *in situ* cancers is uncertain. For at least some tumor types, it appears to be common for *in situ* cancers to fail to progress to invasive disease; hence, in certain circumstances the importance of detecting and removing *in-situ* cancers is unclear.

2. Invasive: These are tumors that are no longer *in situ*; they have spread into neighboring tissues. The invasion of other tissues is one of the fundamental characteristics that distinguish malignant from benign cells. Many national cancer statistics will be reported for invasive disease only, that is, excluding *in situ* cancers. The term “invasive” should not be confused with the term “advanced.” Invasion is the point at which cells can be identified as unequivocally malignant, but the cancer may still be limited to just a few cells in size, and be highly curable. Advanced cancer is an imprecise term that typically refers to metastatic disease.
3. Localized: These are cancers that appear to have remained in the organ in which they first developed.
4. Regional: These are cancers that have metastasized out of the organ of origin, but appear to be limited to the area of the body in and around that organ.
5. Metastatic: These are tumors that have spread beyond the organ of origin. The ability to spread to other organs is one of the fundamental characteristics that defines malignancy. Metastasis may be regional or distant, although in some usage it has become synonymous with distant, or widespread, disease.
6. Stage: The tumor stage is usually determined at the time of diagnosis and describes the apparent extent of progression after a staging evaluation is completed. Localized, regional, and distant are all terms that refer to stage; however, other staging classifications exist. Cancer staging is useful for defining treatment options, prognosis, and for categorizing patients for research.
7. Site and morphology (terms used in the International Classification of Disease for Oncology (ICD-O ) coding system for cancers): Site refers to the organ in which the cancer developed. Morphology (tissue type) refers to the nature of the cells that became cancerous. Both are important, and they are often used together to describe a cancer (e.g., squamous cell carcinoma of the lung). Many different organs may be able to produce a specific morphologic type of cancer (e.g., a melanoma may come from the eye instead of the skin), or a single organ may give rise to many possible morphologic types of cancer (e.g., a lung cancer may be squamous cell carcinoma, adenocarcinoma , small cell carcinoma, etc).
8. Carcinoma: Refers to cancers arising from epithelial cell layers (surface or lining tissues). Most cancers of the lung, colon, breast, cervix, skin, and prostate are carcinomas.
9. Urban: Counties with  $\geq 150$  persons per square mile.
10. Mixed: Counties with  $\geq 20$  to 149.9 persons per square mile
11. Rural: Counties with  $< 20$  persons per square mile.

# BREAST CANCER

## Background

In 1999, 1782 breast cancers were identified among Kansas residents, of which 99.4% were among women. (Lai, 2000) Breast cancer is the most frequently diagnosed cancer among women and the second most common cause of cancer death among women, accounting for approximately 400 deaths in Kansas each year. (CDC Wonder) Infiltrating ductal carcinoma is the histologic type of breast cancer most commonly diagnosed, representing 75% of the breast cancer reported to the cancer registry in 1999. (Cancer incidence files, 1999) Infiltrating ductal carcinoma actually represents breast cancers that cannot be classified into more specific histologic types. (Schnitt, Guidi, 2000)

Breast cancer is uncommon among women less than age 40 and has a peak incidence among women ages 65 to 74. White females are more often diagnosed with invasive breast cancer than are females of other racial groups in Kansas (white 122.4 cases per 100,000 white women, African American 107.0 cases per 100,000 African-American women, other race 52.1 cases per 100,000 persons of other race). (Cancer incidence files, 1996-1999) However, African-American women have higher death rates than persons of white race (white 26.5 deaths per 100,000 white women, African American 39.4 deaths per 100,000 African-American women). (Kansas vital statistics, 1999-2000) The higher mortality among African American women compared to white women may be, at least partially, accounted for by a higher percentage of African-American women who have regional or distant metastasis at the time of diagnosis (white 34%, African-American 46%). (Cancer Incidence Files, 1996-1999)

The causes of breast cancer are not known, and risk factors for breast cancer that have been identified are not, by and large, modifiable. However, because it is typically a slow growing tumor that metastasizes late, early identification followed by treatment to remove or destroy the tumor represents the current best practice for preventing death due to the cancer. Recommendations for screening vary somewhat between advisory groups. The US Preventive Services Task Force recommends mammography (with or without a clinical breast exam (CBE)) every one to two years for women over 40. (USPSTF, 2002) The American Cancer Society recommends a mammogram and clinical breast exam every year beginning at age 40, and a CBE every three years for women ages 20-39. (ACS, 2000) In 2000, 24% of women ages 40 and over had not had a mammogram in the past two years, and 21% of women ages 18 years and older had not had a clinical breast exam within the past two years. Women who appear to be at increased risk of not having a recent mammogram included women in households making less than \$20,000 per year, women of Hispanic ethnicity, women of race other than white or African American, and women without a high school education. (BRFSS, 2000)

## **Issue Perception**

### *Disparity*

- Disease incidence, mortality, access to care, and access to research are disproportionately worse for some populations (e.g., age, race, disability, geographic location) than for others.
- Barriers arising from differences in culture, language, and literacy affect access to services (e.g., screening, education).

### *Data*

- Large gaps exist in knowledge related to breast cancer risk, utilization of services, optimum treatment and palliation, quality of care, unmet need, impact of disease on disparate populations and patient access to research studies.
- Inadequate data systems hamper understanding of breast cancer.
- Available data systems are underutilized.

### *Education*

- Public awareness and acceptance of individual cancer risk and risk reduction are impairing public health efforts to reduce morbidity and mortality from breast cancer.
- Systems for delivering health education are deficient, and existing mechanisms are underutilized.
- The training of providers to deliver health education to patients for improving breast health is deficient.
- Many persons lack awareness or opportunity for access to research protocols that may benefit both them and others.

### *Diagnosis and Treatment*

- Many deaths due to breast cancer are preventable.
- Screening for breast cancer is not adequately utilized as a tool for preventing premature death due to breast cancer.
- Monitoring and quality improvement of diagnostic services are required to ensure that as many cancers as possible are detected with the least risk to patients.
- Monitoring and quality improvement of therapeutic services is required to ensure that Kansans experience the lowest breast cancer morbidity and mortality possible given the current state of the art.

### *Recovery and Palliation*

- Recovery care following breast cancer therapy that re-integrates persons into family, society, and workplace is deficient.
- Provision of palliative care including quality of medical care delivery and access to hospice is deficient.



### *Policy and Resources*

- Inadequacy of resources for provision of screening and treatment services to persons with low income remains a problem.

### **Health Objectives - Health Status and Risk Behavior**

#### **BR1: By 2010, decrease breast cancer mortality among women by 10% to 24.1 deaths per 100,000 women.**

	Age Adjusted KS baseline (1999-2000 CHES Mortality files, 2000 Standard)	26.8
	Age Adjusted US baseline (1999 NCHS Data Tables, 2000 Standard)	26.9
Sub 1	Race/ethnicity baseline (1999-2000 CHES Mortality files, 2000 Standard)	
	White (including Hispanic)	26.5
	African-American (including Hispanic)	39.4
	Hispanic	NA
Sub 2	Population density baseline (1999-2000 CHES Mortality files, 2000 Standard)	
	Urban	27.8
	Mixed	26.3
	Rural	25.6

#### **BR2: By 2010, decrease the percentage of invasive female breast cancers (excluding *in situ*) diagnosed with regional or distant metastasis to less than 25%**

	KS baseline (1996-99 Kansas Cancer Registry, unstaged cancers excluded)	34%
	SEER baseline (1989-95 SEER Cancer Statistics, unstaged cancers excluded)	36%
Sub1	Race/ethnicity baseline (1998 Kansas Cancer Registry, unstaged cancers excluded)	
	White (including Hispanic)	34%
	African American (including Hispanic)	46%
	Hispanic	NA
Sub2	Population density baseline (1996-1998 Kansas Cancer Registry, unstaged cancers excluded)	
	Urban	35%
	Mixed	33%
	Rural	35%

<b>BR3</b>	<b>By 2010, increase the percentage of women ages 50 and older who have received a mammogram within the past two years to greater than 85%.</b>	
	KS baseline (1998, 1999, 2000 combined BRFSS)	78%
	US baseline (1999 BRFSS, median of states)	75%
Sub 1	Race/ethnicity baseline (1998, 1999, 2000 combined BRFSS)	
	White (excluding Hispanic)	78%
	African-American (excluding Hispanic)	80%
	Hispanic	71%
Sub2	Population density baseline (1998, 1999, 2000 combined BRFSS)	
	Urban	81%
	Mixed	78%
	Rural	71%
Sub 3	Income baseline - (1998, 1999, 2000 combined BRFSS)	
	<\$20,000	68%
	≥\$20,000	81%
<b>BR4</b>	<b>By 2010, increase the percentage of women ages 50 and older who have received a mammogram and a CBE in the past two years to greater than 80%.</b>	
	KS baseline: (1998, 1999, 2000 combined BRFSS)	69%
	US baseline (1999 BRFSS, median of states)	68%
Sub1	Race/ethnicity baseline (1998, 1999, 2000 combined BRFSS)	
	White (excluding Hispanic)	69%
	African American (excluding Hispanic)	68%
	Hispanic	59%
Sub2	Population density baseline - (1998, 1999, 2000 combined BRFSS)	
	Urban	73%
	Mixed	68%

	Rural	63%
Sub 3	Income baseline - (1998, 1999, 2000 combined BRFSS)	
	<\$20,000	59%
	≥\$20,000	73%
<b>BR5</b>	<b>By 2010, increase the percentage of women ages 40 and older who have ever received a mammogram and a CBE to greater than 85%.</b>	
	KS baseline (1998, 1999, 2000 combined BRFSS)	79%
	US baseline	NA
Sub1	Race/ethnicity baseline (1998, 1999, 2000 combined BRFSS)	
	White (excluding Hispanic)	80%
	African-American (excluding Hispanic)	73%
	Hispanic	67%
Sub 2	Population density baseline	
	Urban	82%
	Mixed	78%
	Rural	76%
Sub 3	Income baseline (1998, 1999, 2000 combined BRFSS)	
	<\$20,000	70%
	≥\$20,000	83%
<b>BR6</b>	<b>By 2010, increase the percentage of women ages 40 and older who have received a mammogram and a CBE in the past two years to greater than 80%.</b>	
	KS baseline (1998, 1999, 2000 combined BRFSS)	68%
	US baseline	NA
Sub1	Race/ethnicity baseline (1998, 1999, 2000 combined BRFSS)	
	White (excluding Hispanic)	68%
	African American (excluding Hispanic)	65%
	Hispanic	53%
Sub 2	Population density baseline - (1998, 1999, 2000 combined BRFSS)	

	Urban	70%
	Mixed	67%
	Rural	62%
Sub 3	Income baseline - (1998, 1999, 2000 combined BRFSS)	
	<\$20,000	56%
	≥\$20,000	71%
<b>BR7</b>	<b>By 2010, increase to 100% the percentage of women ages 18 and older who recognize the need to receive an annual CBE and instruction on self-examination consistent with guidelines of the American Cancer Society.</b>	
	KS baseline	NA
	US baseline	NA
<b>BR8</b>	<b>By 2010, increase to 100% the percentage of women ages 40 and older who recognize the need to receive annual screening with mammograms consistent with guidelines of the American Cancer Society.</b>	
	KS baseline	NA
	US baseline	NA
<b>BR9</b>	<b>By 2010, increase the percentage of Kansas women who choose to enroll in clinical research studies of breast cancer (including cancer prevention).</b>	
	KS baseline	NA
<b>BR10</b>	<b>Increase to 25% the proportion of primary providers trained each year to provide breast cancer education to culturally diverse populations.</b>	
	KS baseline	NA
<b>BR11</b>	<b>Increase to 100% the proportion of medical and nursing students trained to educate patients regarding breast health.</b>	
	KS baseline	NA
<b>BR12</b>	<b>Increase the proportion of minority patients and patients with low socio-economic status in breast cancer trials.</b>	
	KS baseline	NA

<b>BR13</b>	<b>Increase the number of Kansas institutions involved in clinical trials.</b> KS baseline	NA
<b>BR14</b>	<b>Increase the completeness of case reporting to the cancer registry to greater than 95% of expected cases.</b> KS baseline (1998)	91%
<b>BR15</b>	<b>Increase the percentage of Kansans with a household income less than \$20,000 and metastatic breast cancer who receive hospice care.</b> KS baseline	NA
<b>BR16</b>	<b>Increase the proportion of Kansans who have metastatic breast cancer who receive referral to hospice prior to the last two months of life.</b> KS baseline	NA

## **Recommended Actions**

### *Disparity*

- Ensure that educational materials and efforts reach all diverse populations, including racial/ethnic populations, rural populations, and disabled populations.
- Make all educational materials and efforts appropriate to the culture to which they are being applied.

### *Data*

- Identify county specific areas of under-reporting of cancer cases and develop ways to improve data collection.
- Identify gaps in the under-marketing and under-utilization of data sources.

### *Education*

- Increase the utilization of available breast cancer educational resources among all Kansans.
- Inform the public about the availability of cancer screening and diagnostic services and how to obtain them.
- Identify, develop and integrate comprehensive school breast health programs into all curricula for grades 9-12 in public, private and parochial schools.
- Increase public awareness about the importance of prompt and appropriate follow-up diagnostic exams and the need for subsequent ongoing care when abnormalities are detected.

### *Diagnosis and Treatment*

- Ensure that mammograms meet federal quality standards by monitoring and certifying that all facilities remain in compliance with the Mammography Quality Standards Act (MQSA) of 1992.
- Improve the outcome of diagnosis and treatment of Kansans with breast cancer.
- Ensure that diagnosis and treatment provided is consistent with standards of the American College of Surgeons and American College of Oncologists.
- Ensure that new technologies for diagnosis and treatment of breast cancer are made available to all Kansans.

### *Recovery and Palliation*

- Ensure that the medical and social infrastructure promotes individual self-sufficiency and social reintegration following the diagnosis and treatment of breast cancer.

### *Policy and Resources*

- Increase available resources to meet the needs of under-served Kansans.
- Identify state and local resources to pay for breast cancer screening services.
- Identify resources to pay for breast cancer treatment services.
- Foster collaboration of resources of the Community Cancer Oncology Program and the Community Group Oncology Program.

### *Research*

- Promote, encourage and support research in Kansas for the prevention, detection, diagnosis, treatment and recovery from breast cancer.
- Evaluate the extent to which Kansans are denied coverage of NCI-approved clinical trials by public or private insurers.
- Identify and remove barriers preventing enrollment in cancer clinical trials.
- Expand eligibility criteria for clinical trials.

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# CERVICAL CANCER

## Background

Cervical cancer accounts for 6% of all cancer in women, and death from cervical cancer accounts for 2% of all cancer deaths. (Lai, 2000) Certain serotypes of the human papillomavirus (HPV), which is sexually transmitted, appear to play an important role in the genesis of the cancer. (Sawaya, Brown, Washington, Garber, 2001) Although pre-malignant cellular changes on the cervix often begin to develop at a young age (second or third decade of life), the cellular changes progress slowly and cancer may not develop until decades later. (Cannistra, Niloff, 1996) In Kansas between 1996 and 1998, 35% of new invasive cervical cancers and 55% of deaths due to cervical cancer occurred among women ages 55 years and older.

Risk factors for developing cervical cancer include initiation of sexual intercourse at an early age, multiple male sex partners, partners with multiple sex partners, and smoking. (Cannistra, et al., 1996) Nationwide, African-American women are at increased risk for developing cervical cancer; however, the number of cancers among African-American women in Kansas are too few to determine stable rates. (CDC Wonder)

Mortality rates from cancer of the cervix decreased in the United States by 70% between 1947 and 1984. While the reasons for this are not entirely clear, screening, which was introduced during this time period, is believed to have played an important role. (Cannistra, et al., 1996) Early detection requires periodic screening of asymptomatic women using a Pap smear. Although an area of malignant transformation may be missed on a single Pap smear (Cannistra, et al., 1996), the long delay from the time of onset of the first cellular changes to the development of cancer provides multiple opportunities for detecting cellular abnormalities if the woman is screened regularly. Most advisory groups recommend that sexually active women 18 years and older have annual Pap smears; however, if three consecutive annual smears are negative, frequency of Pap testing may be reduced to every three years. No consensus exists regarding the age to terminate screening. (USPSTF, 1996)

## Issue Perception

### *Disparity*

- Incidence and mortality rates of carcinoma of the cervix are higher for some race/ethnicity groups and age groups than for others. Risk factor prevalence is also greater for some racial/ethnic groups and age groups than for others.
- Barriers arising from differences in culture, behavior, socioeconomic status and literacy affect access to services.

### *Data*

- Data related to risk factor prevalence for cervical cancer is limited.
- Available data are underutilized.



### *Education*

- Low public awareness of the possible risk factors and lack of individual concern about personal risk behavior are barriers to the prevention of cervical cancer.
- Systems for delivering health education are not always culturally appropriate.

### *Diagnosis and Treatment*

- Deaths due to cervical cancer are potentially preventable.
- Screening for cervical cancer is not fully utilized as a tool for preventing premature death due to cervical cancer.

### *Policy and Resources*

- Adequacy of resources for the provision of screening and treatment services to persons with low income remains a problem.

## **Health Objectives - Health Status and Risk Behavior**

<b>CX1</b>	<b>By 2010, decrease cervical cancer mortality among women to less than 1.5 per 100,000 women.</b>	
	Age adjusted KS baseline (1999-2000 CHES Mortality Files, 2000 Standard)	1.9
	Age Adjusted US baseline (1999 NCHS Mortality Tables, 2000 Standard)	1.5
Sub 1	Race/ethnicity baseline (1999-2000 CHES Mortality Files, 2000 Standard)	
	White (including Hispanic)	2.0
	Black	NA
	Hispanic	NA
Sub 2	Population density baseline	NA
<b>CX2</b>	<b>By 2010, increase the percentage of women ages 18 and older with a uterine cervix who have ever received a pap smear to greater than 98%.</b>	
	KS baseline (1998,1999,2000 combined BRFSS)	95%
	US baseline (2000 BRFSS)	95%
Sub 1	Race/ethnicity baseline (1998,1999,2000 combined BRFSS)	
	White (excluding Hispanic)	95%
	African American (excluding Hispanic)	96%
	Hispanic	92%
Sub 2	Population density baseline (1998,1999,2000 combined BRFSS)	

	Urban	96%
	Mixed	94%
	Rural	93%
Sub 3	Income baseline	
	<\$20,000	91%
	≥\$20,000	96%
<b>CX3</b>	<b>By 2010, increase the percentage of women ages 18 and older who have received a pap smear in the past two years to greater than 90%.</b>	
	KS baseline (1998,1999,2000 combined BRFSS)	79%
	US baseline	NA
Sub 1	Race/ethnicity baseline (1998,1999,2000 combined BRFSS)	
	White (excluding Hispanic)	79%
	African American (excluding Hispanic)	88%
	Hispanic	84%
Sub 2	Population density baseline (1998,1999,2000 combined BRFSS)	
	Urban	87%
	Mixed	82%
	Rural	80%
Sub 3	Income baseline	
	<\$20,000	74%
	≥\$20,000	87%

## Recommended Actions

### *Disparity*

- Ensure that educational materials and efforts reach all diverse populations, including racial/ethnic populations and disabled populations.
- Develop alliances with providers to enhance cervical cancer education to patients.
- Make all educational materials and efforts appropriate to the culture to which they are applied.

### *Data*

- Develop a statewide system to monitor screening and follow-up for all cervical

cancer screening services.

- Develop a statewide system to monitor the accuracy of Pap smear reading to ensure at least 85% accuracy.
- Increase the availability of data for program evaluation.

#### *Education*

- Educate providers how to remove barriers to women receiving care.
- Increase provider-delivered education regarding risk factors for cervical cancer.
- Among uninsured Kansans, increase awareness of available screening and possible treatment options.

#### *Diagnosis and Treatment*

- Ensure that patients are fully informed of treatment options.
- Ensure that all cytology laboratories meet CLIA standards.
- Ensure adequate follow-up of all Free-To-Know patients.
- Develop collaborative relationships between the Free-To-Know program and state organizations.

#### *Policy and Resources*

- Identify populations for which increased funding is needed for screening and treatment.
- Increase state and federal sources of money for outreach, screening and treating women.
- Identify resources for training of providers.
- Identify resources for data collection.

#### *Research*

- Increase the enrollment of Kansas women in clinical trials by identifying and removing barriers.

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# COLORECTAL CANCER

## Background

Colorectal cancer represents 13% of all newly diagnosed cancers in Kansas, and is the second leading cause of cancer death. In 1999, 1493 Kansans were diagnosed with colorectal cancer and 591 Kansans died. (Lai, 2000) Survival depends on stage of progression at the time of diagnosis. Currently approximately 60% of persons who are diagnosed with colorectal cancer can expect to be alive five years later; however, if detected while the cancer is still localized to the bowel, 90% of persons can expect to be alive five years later. (Ries, et al., 1999)

The most important known risk factors for developing colorectal cancer are family history, advancing age, high fat-low fiber diet, and reduced physical activity. Some studies have suggested that obesity is a risk factor, but this has not been confirmed. (Brownson, Reif, Alavanja, Bal, 1998) Aspirin appears to be protective against colorectal cancer; however, a recently published decision analysis of using aspirin with screening among persons ages 50 to 80 casts doubt on its clinical utility. Because of complications arising from aspirin use, using it in addition to screening increased cost and decreased life years. (Ladabaum, et al., 2001)

Pre-cancerous dysplastic changes, usually associated with polyp development, nearly always precede the development of cancer by many years. Between 5% and 40% of typical polyps will become malignant, but the transformation is slow, requiring 10-15 years to progress to cancer. (USPSTF, 1996; Rosen, 1997) Removing the pre-cancerous cells from the colon decreases a person's subsequent risk of developing cancer. However, because polyps are not typically associated with any symptoms, they are frequently not discovered until they have become cancerous.

Early detection of cancerous and pre-cancerous lesions depends on screening. Routine screening has demonstrated a reduction in mortality from colorectal cancer from 33% to as high as 80%. (Rimer, Schildkraut, 1997) However, while screening can effectively lower colorectal cancer mortality for persons ages 50 and older, the optimal timing and best tests to use remain to be determined. (USPSTF, 1996) Although supportive of colorectal cancer screening, the US Preventive Services Task Force did not feel that data was sufficient to permit them to recommend a specific screening regimen. The American Cancer Society recommends one of the following:

- a) annual fecal occult blood test plus sigmoidoscopy every five years;
- b) colonoscopy every 10 years;
- c) a double contrast barium enema every five years.
- d) fecal occult blood test every year; or
- e) flexible sigmoidoscopy every five years. (ACS)

## Issue Perception

### *Disparity*

- Incidence and mortality rates for colorectal cancer tend to be worse in certain gender and age groups.
- Access to services (screening and treatment) is limited for some populations.

### *Data*

- Insufficient surveillance data are available to understand how screening and treatment services are being delivered to all populations in the state.
- Insufficient data are available which evaluate the effectiveness of interventions to increase screening.

### *Education*

- The public is not adequately educated regarding the importance of fruit and vegetable consumption and physical activity to reduce risk for cancer.
- Primary care providers do not refer patients for dietary counseling and weight reduction as often as they should.
- Health risk communication does not adequately reach the public.

### *Diagnosis and Treatment*

- Screening for colorectal cancer is not adequately utilized as a tool for preventing premature death due to the disease.

### *Recovery and Palliation*

- Rehabilitation following cancer treatment needs to be part of patient management.
- Improvements are needed in end-of-life care, including pain control and advance directives.

### *Policy and Resource*

- Inadequate resources are available for the provision of screening and treatment services to persons with low income.

### *Research*

- Additional research is needed to determine optimal screening approaches.
- Research is needed to define the role of aspirin and other non-steroidal medications in preventing colorectal cancer.
- Additional research is needed to improve the quality of life for persons dying of cancer, including adequacy of pain control.
- Patients are not consistently provided information about the availability of clinical trials.
- Therapeutic options for treating advanced colorectal cancer are very limited. New research is needed to improve survival.

## **Health Objectives- Health Status and Risk Behavior**

**CR1            By 2010, decrease colorectal cancer mortality among Kansans to less than 15 per 100,000 persons.**

	Age adjusted KS baseline (1999-2000 CHES Mortality Files, 2000 Standard)	19.6
	Age adjusted US baseline (1999 CDC Wonder, 2000 Standard)	20.8
Sub1	Race/ethnicity baseline (1999-2000 CHES Mortality Files, 2000 Standard)	
	White (including Hispanic)	19.6
	Black (including Hispanic)	29.0
	Hispanic	NA
Sub 2	Population density baseline (1999-2000 CHES Mortality Files, 2000 Standard)	
	Urban	18.0
	Mixed	20.8
	Rural	20.9
<b>CR2</b>	<b>Decrease the incidence of colorectal cancer to 45 cases per 100,000 persons.</b>	
	Age adjusted KS baseline (1999 Kansas Cancer Registry, 2000 Standard)	52.0
	Age Adjusted US baseline	NA
Sub1	Race/ethnicity baseline (1996-1999 Kansas Cancer Registry, 2000 Standard)	
	White (including Hispanic)	52.1
	Black (including Hispanic)	65.7
	Hispanic	NA
Sub 2	Population density baseline (1999 Kansas Cancer Registry, 2000 standard)	
	Urban	48.6
	Mixed	52.6
	Rural	58.7
<b>CR3</b>	<b>Decrease the age-adjusted rate of hospital discharge with primary diagnosis of colorectal cancer to 40/100,000.</b>	
	KS baseline (2000 fiscal year hospital discharge data)	51.9
	US baseline	NA
Sub 1	Race/ethnicity baseline (2000 fiscal year hospital discharge data)	
	White (including Hispanic)	46.6
	Black (including Hispanic)	61.8

	Hispanic	NA
Sub 2	Population density baseline	
	Urban	50.1
	Mixed	54.6
	Rural	49.9
<b>CR4</b>	<b>By 2010, increase the percentage of persons ages 50 and older who have had both a sigmoidoscopy in the past 5 years and a fecal occult blood stool test in the past year to greater than 15%.</b>	
	KS baseline (1999 BRFSS)	8.9%
	US baseline	NA
Sub 1	Race/ethnicity baseline (1999 BRFSS)	
	White (excluding Hispanic)	9%
	Black (excluding Hispanic)	7%
	Hispanic	16%
Sub 2	Population density baseline (1999 BRFSS)	
	Urban	10%
	Mixed	10%
	Rural	5%
Sub 3	Income	
	<\$20,000	4%
	≥\$20,000	10%
<b>CR5</b>	<b>By 2010, increase the percentage of persons ages 50 and older who had FOBT in the past year to greater than 25%.</b>	
	KS baseline (1999 BRFSS)	19%
	US baseline	NA
Sub 1	Race/ethnicity baseline (1999 BRFSS)	
	White (excluding Hispanic)	19%
	Black (excluding Hispanic)	16%
	Hispanic	23%



Sub 2	Population density baseline (1999 BRFSS)	
	Urban	21%
	Mixed	21%
	Rural	11%
Sub 3	Income	
	<\$20,000	14%
	≥\$20,000	20%
<b>CR6</b>	<b>By 2010, increase the percentage of persons ages 50 and older who have had a sigmoidoscopy in the past five years to greater than 35%.</b>	
	KS baseline (1999 BRFSS)	29%
	US baseline	NA
Sub 1	Race/ethnicity baseline (1999 BRFSS)	
	White (excluding Hispanic)	29%
	Black (excluding Hispanic)	21%
	Hispanic	22%
Sub 2	Population density baseline (1999 BRFSS)	
	Urban	31%
	Mixed	28%
	Rural	26%
Sub 3	Income	
	<\$20,000	22%
	≥\$20,000	30%
<b>CR7</b>	<b>By 2010 increase the percentage of Kansas adults who report consuming fruit and vegetables five or more times per day to 30%.</b>	
	KS baseline (2000 BRFSS)	23%
	US baseline (2000 BRFSS)	23%
Sub 1	Race/ethnicity baseline (2000 BRFSS)	
	White (excluding Hispanic)	24%
	Black (excluding Hispanic)	23%

	Hispanic	22%
Sub 2	Population density baseline	
	Urban	22%
	Mixed	25%
	Rural	29%
Sub 3	Income	
	<\$20,000	25%
	≥\$20,000	22%
<b>CR8</b>	<b>Increase the percentage of Kansas adults who report that they have ever been counseled by a doctor or other health care professional about their diet or nutrition to 45%.</b>	
	KS baseline (2000 BRFSS)	35%
	US baseline	NA
Sub 1	Race/ethnicity baseline (2000 BRFSS)	
	White (excluding Hispanic)	35%
	Black (excluding Hispanic)	42%
	Hispanic	18%
Sub 2	Population density baseline (2000 BRFSS)	
	Urban	38%
	Mixed	32%
	Rural	32%
Sub 3	Income	
	<\$20,000	32%
	≥\$20,000	36%
<b>CR9</b>	<b>Decrease the proportion of Kansas adults who are overweight (BMI≥25) to less than 50%.</b>	
	KS baseline (2000 BRFSS)	59%
	US baseline (2000 BRFSS)	57%
Sub 1	Race/ethnicity baseline	

	White (excluding Hispanic)	59%
	Black (excluding Hispanic)	66%
	Hispanic	62%
Sub 2	Population density baseline	
	Urban	56%
	Mixed	60%
	Rural	63%
Sub 3	Income	
	<\$20,000	51%
	≥\$20,000	61%
<b>CR10</b>	<b>Increase the proportion of Kansas adults who engage in any leisure time physical activity to 80%.</b>	
	KS baseline (2000 BRFSS)	70%
	US baseline	NA
Sub 1	Race/ethnicity baseline (2000 BRFSS)	
	White (excluding Hispanic)	71%
	Black (excluding Hispanic)	63%
	Hispanic	47%
Sub 2	Population density baseline	
	Urban	74%
	Mixed	68%
	Rural	62%
Sub 3	Income	
	<\$20,000	60%
	≥\$20,000	74%
<b>CR11</b>	<b>Increase the percentage of persons ages 12-15 who regularly engage in moderate physical activity.</b>	
	KS baseline	NA
	US baseline	NA

**CR12      By 2010, increase the percentage of persons ages 50 and older who have had either 1) a sigmoidoscopy in the past 5 years and a fecal occult blood stool test in the past year, or 2) have had a colonoscopy in the past 10 years to greater than 15%.**

KS baseline

NA

## **Recommended Actions**

### *Disparity*

- Ensure that populations at risk for reduced health care access receive timely surgery and chemotherapy.
- Decrease colorectal cancer risk factors among racial and ethnic minorities.
- Decrease the percentage of persons who are not getting screened for colorectal cancer due to cost.

### *Data*

- Identify Kansans at increased risk for colorectal cancer.
- Identify the extent to which populations at risk for reduced health care access fail to receive timely surgery and chemotherapy.
- Ensure that current data collection tools, including BRFSS, accurately capture current data needs.
- Increase the availability of data to evaluate program efficacy at the state and local level.
- Identify the extent to which physicians are aware of clinical trials which may benefit their patients, and the extent to which physicians educate their patients about the availability of clinical trials.
- Identify the extent to which insurance companies adequately cover the costs of colorectal cancer screening.

### *Education*

- Improve education of the public through health communication and social marketing to increase the utilization of available screening for colorectal cancer.
- Improve education of the public to reduce the prevalence of colorectal cancer risk factors in Kansas.

### *Diagnosis and Treatment*

- Develop consistent guidelines statewide for colorectal cancer screening.
- Increase the percentage of persons with colorectal cancer who receive timely surgical and chemotherapy treatment.

### *Recovery and Palliation*

- Increase the percentage of patients with end stage colorectal cancer who receive appropriate pain management.
- Increase the percentage of physicians who use appropriate pain management to

treat their patients who have end stage colorectal cancer.

- Increase the percentage of cancer providers who develop rehabilitation plans, including nutrition, physical activity, care of colostomy, behavior change strategies, and regular updates on patient progress, at the time of treatment initiation.

#### *Policy and Resources*

- Increase resources devoted to finding new therapeutic options for patients with colorectal cancer.
- Increase resources dedicated to outreach for improving utilization of colorectal cancer screening services including design, implementation, and evaluation of model programs.
- Increase resources dedicated to reduction of colorectal cancer risk factors including design, implementation and evaluation of model programs.
- Secure resources dedicated to providing colorectal cancer screening to those who cannot afford it.

#### *Research*

- Increase the number of effective chemotherapy agents used to treat colorectal cancer.
- Clarify the risk and benefit of routine use of non-steroidal anti-inflammatory medications in the prevention of colorectal cancer.
- Increase the percentage of providers who adequately inform their patients about the availability of clinical trials.
- Increase the percentage of providers who share information about clinical trials with other providers.

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# LUNG CANCER

## **Background**

In 1999, 1675 Kansans were diagnosed with lung cancer and 1475 persons died. Lung cancer is the third most commonly diagnosed cancer, and the leading cause of cancer death, accounting for about 30% of all cancer deaths in the state. (Lai, 2000) The prognosis for lung cancer is poor; only 14% of persons with the disease will be alive five years after diagnosis. Even if found while it is still localized to the lung, five-year survival is less than 50%. (Reis, et al., 1999) Because lung cancer is usually asymptomatic until it has spread outside of local tissues, fewer than 20% of lung cancers are diagnosed while the disease is still localized. Studies have not shown that screening for lung cancer reduces mortality. Currently, none of the organizations that publish preventive screening recommendations recommend routine screening for any population. (USPSTF, 1996)

Although neither early detection nor treatment of lung cancer offers much hope for reducing lung cancer deaths below current levels, lung cancer is highly preventable. Tobacco smoking is estimated to account for 87% of all lung cancers, and an additional 2% of lung cancers have been attributed to passive smoke exposure. Environmental exposures have been implicated as likely causal agents for most non-tobacco related cases; these exposures include residential radon gas and occupational chemical exposure. (Brownson, et al., 1998) Consequently, nearly all cases of lung cancer are potentially preventable.

Because tobacco accounts for the overwhelming majority of cases, tobacco use prevention, particularly preventing children from starting to smoke, offers the best hope for achieving substantial reductions in lung cancer mortality. Primary prevention through risk reduction was the key focus of the lung cancer work group.

## **Issue Perception**

### *Disparity*

- Prevalence of smoking is disproportionately higher among some populations than among others.
- A lack of funding exists for identifying radon gas exposure among populations with low socioeconomic status.

### *Data*

- Little is known about the use of palliative care by lung cancer patients.
- Understanding of tobacco prevention and cessation programs is limited due to lack of surveillance systems.
- Estimation of human exposure to carcinogens is not possible because there is no statewide data system.
- Understanding of environmental tobacco smoke and tobacco use is limited by inadequate survey data.

### *Education*

- Public health efforts to decrease smoking prevalence are hampered by

inadequate age-appropriate tobacco prevention and cessation programs for both children in grades K-12, as well as for adults.

- Public awareness programs about the dangers of radon exposure are deficient.

#### *Recovery and Palliation*

- Access to adequate palliative care, including hospice care, is deficient.
- Hospice care for those dying of lung cancer is not adequately utilized.

#### *Policy and Resources*

- Many employers do not provide a smoke free workplace.
- Adherence to and enforcement of underage tobacco purchase laws is deficient.
- Inadequate radon testing and remediation exists in geographic areas prone to high levels of radon gas.
- Requirements for testing and remediation of radon exposure in new construction are too lenient.
- Resources have not been identified to conduct a comprehensive tobacco-use prevention program statewide.

### **Health Objectives B Health Status and Risk Behavior**

<b>LC1</b>	<b>By 2010, decrease age-adjusted lung cancer mortality to 50 deaths per 100,000.</b>	
	KS baseline (1999-2000 CHES mortality files, 2000 Standard)	53.6
	US baseline	56.0
Sub 1	Race/ethnicity baseline(1999-2000 CHES mortality files, 2000 Standard)	
	White (including Hispanic)	53.7
	African-American (including Hispanic)	66.2
	Hispanic	NA
Sub 2	Population density baseline (1999-2000 CHES mortality files, 2000 Standard)	
	Urban	56.6
	Mixed	53.7
	Rural	48.8
<b>LC2</b>	<b>Reduce the age-adjusted hospitalization rate for COPD to 275 discharges per 100,000 population.</b>	
	KS baseline (2000 KHA discharge data, age adjusted-2000 Standard)	310
	US baseline	NA



Sub 1	Race/ethnicity (2000 KHA discharge data, age adjusted-2000 Standard)	
	White (including Hispanic)	265
	African-American (including Hispanic)	489
	Hispanic	NA
Sub 2	Population density (2000 KHA discharge data, age adjusted-2000 Standard)	
	Urban	290
	Mixed	300
	Rural	390
<b>LC3</b>	<b>Reduce the prevalence of current smoking among adults to less than 15%.</b>	
	KS baseline (2000 BRFSS)	21%
	US baseline (2000 BRFSS, Median)	23%
Sub 1	Race/ethnicity (2000 BRFSS)	
	White (excluding Hispanic)	21%
	Black (excluding Hispanic)	21%
	Hispanic	21%
Sub 2	Population density (2000 BRFSS)	
	Urban	21%
	Mixed	22%
	Rural	18%
Sub 3	Income (2000 BRFSS)	
	<\$20,000	32%
	≥\$20,000	20%
<b>LC4</b>	<b>Reduce the prevalence of current smoking among African-American adults to less than 15%.</b>	
	KS baseline (2000 BRFSS)	21%
	US baseline (2000 BRFSS, 52 state/territory median)	23%

<b>LC5</b>	<b>Reduce the prevalence of current smoking among Hispanic Adults to less than 15%</b>	
	KS baseline (2000 BRFSS)	21%
	US baseline (2000 BRFSS, 52 state/territory median)	22%
<b>LC6</b>	<b>Reduce the rate of smoking by students in grades 6, 7 and 8 to 10%.</b>	
	KS baseline (2000 Kansas Youth Tobacco Survey)	8%
	US baseline (2000 US Youth Tobacco Survey)	9%
Sub 1	Race/ethnicity (2000 Kansas Youth Tobacco Survey)	
	White	8%
	African-American	6%
	Hispanic	13%
<b>LC7</b>	<b>Reduce the rate of smoking by 12<sup>th</sup> graders to 20%.</b>	
	KS baseline (2000 Kansas Youth Tobacco Survey)	35%
	US baseline	NA
Sub 1	Race/ethnicity	
	White	39%
	African-American	11%
	Hispanic	33%
<b>LC8</b>	<b>Increase the proportion of adults who report a no smoking policy at work to greater than 70% (among employed adults who work in a building other than their own home).</b>	
	KS baseline (Kansas 1998 tobacco survey)	64%
	US baseline	NA
Sub 1	Population density (Kansas 1998 tobacco survey)	
	Urban	67%
	Mixed	62%
	Rural	62%
<b>LC9</b>	<b>Reduce total purchases of tobacco by minors</b>	

KS baseline	NA
US baseline	NA

## **LC10      Decrease tobacco related disabilities**

KS baseline	NA
US baseline	NA

### **Recommended Actions**

#### *Disparity*

- Increase the identification and remediation of radon exposure among low income populations.

#### *Data*

- Establish a statewide data system to evaluate and coordinate the monitoring of exposure to carcinogens.
- Expand use of the BRFSS to collect data related to passive smoke exposure.
- Expand survey data collection on youth tobacco use.
- Further develop surveillance systems to monitor tobacco prevention and cessation programs.

#### *Education*

- Provide age appropriate youth smoking cessation programs.
- Increase use of primary prevention curricula in K-12.
- Increase public awareness of the dangers of radon exposure.

#### *Recovery and Palliation*

- Develop surveillance systems to monitor the delivery of palliative care.
- Increase hospice use among Kansans dying of lung cancer.

#### *Policy and Resources*

- Increase testing of existing homes for radon.
- Increase radon remediation in existing buildings.
- Identify resources to conduct comprehensive tobacco use prevention program statewide.
- Require new construction to pass EPA guidelines for radon.

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## PROSTATE CANCER

The prostate gland, part of the male reproductive system, is a walnut sized organ located just below the urinary bladder and in front of the rectum. Invasive cancer of the prostate is limited almost exclusively to men over 50 years old, and most cases are diagnosed between ages 65 and 80. Prostate cancer is common, with about 1800 cases diagnosed in Kansas each year. Death due to prostate cancer is also common; about 300 Kansans die from prostate cancer each year. (Lai, 2000). Compared to white males, black males experience a higher age adjusted incidence (133/100,000 vs. 206/100,000, year 2000 standard) (Cancer incidence files, 1999) and mortality (27/100,000 vs. 69/100,000, year 2000 standard) (Kansas vital statistics, 1999 and 2000); however, the percentage of prostate cancers with regional or metastatic spread at the time of diagnosis was only slightly greater among black males than white males (21% vs. 18%). (Cancer incidence files, 1996-1999).

The cause of prostate cancer is not known; consequently, preventing the development of prostate cancer is not possible at this time. Universal screening of men at risk has been proposed by some experts as the best method for preventing prostate cancer deaths. Increased use of screening, especially following the introduction of the prostate specific antigen (PSA) blood test in the 1980's, has resulted in a sharp rise in the number of men being diagnosed and treated for prostate cancer over the past 10-15 years (Ellison, Heaney, Birkmeyer, 1999; Wingo, et al., 2000; USPSTF, 1996); however, the value of early detection and treatment remains uncertain.

The behavior of prostate cancer is unusual. Autopsy studies of men dying from causes other than cancer have found evidence for prostate cancer among 30% of men between ages 30-49, and up to 100% of men ages 80 years and older. (USPSTF, 1996). Because prostate cancer may remain latent for decades, many men with prostate cancer will die of causes unrelated to the cancer. Consequently, finding and treating the cancer will not prolong life for all men. Determining who will benefit from early diagnosis and treatment is an unresolved issue of considerable importance.

Detection of many prostate cancers while localized to the gland is possible using digital rectal exam (DRE) and measurement of PSA in the blood. Using a combination of DRE and PSA to screen for prostate cancer will result in a biopsy for approximately 18% of those screened. Most of those persons who receive a biopsy will not be diagnosed with cancer. (USPSTF, 1996) Once identified, cancer localized to the prostate gland can be left alone, treated by surgical removal of the gland, or treated with radiation therapy. Treatment of prostate cancer with either surgery or radiation has a substantial rate of complications including loss of bladder continence, impotence, bowel dysfunction and, rarely, death. (USPSTF, 1996) Optimally, only those men who would die from the cancer if left alone should be treated; however, at this time it is often not possible to distinguish those who will likely die from the cancer from those who won't.

Screening for prostate cancer is premised on the belief that early diagnosis followed by treatment is beneficial. However, definitive evidence that treatment of localized prostate cancer results in prolonged survival or improved quality of life is not available. Because of this, advisory groups disagree about the appropriateness of universal screening. The American Cancer Society, American Urologic Society, and American

College of Radiology recommend universal screening. The Preventive Services Task Force, Canadian Task Force on Periodic Examination, and American College of Physicians do not. (USPSTF, 1996, ACP, 1997) Evidence is clear that those persons most likely to benefit from screening are men ages 60 to 69. (USPSTF, 1996; ACP, 1997) Below age 60 the incidence of disease is relatively low; above age 69 the survival benefit of intervention drops and the risk of complications rises.

The Prostate Cancer Workgroup for the Kansas Cancer Plan recognized that sufficient information was not available to make strong recommendations for or against screening. A majority of the work group favored increased screening, but this did not represent consensus. The consensus opinion of the group was that offering screening to men ages 60-69 was an acceptable approach as long as a clear explanation of the potential risk versus benefit of early diagnosis and early treatment of prostate cancer is

provided before screening. Although the risk/benefit equation tilts away from screening for persons younger than 60 and older than 69, the work group decided that prostate cancer screening was still acceptable if this was the choice of a patient who had a full understanding of the uncertain benefits and potential risks of the interventions that may follow an abnormal screening.

Because of the complexity of this issue, two sets of objectives are presented for this topic. The first set represents consensus objectives; the second set represents additional majority objectives for which a clear consensus was not obtained. Studies now underway may provide more definitive evidence regarding the appropriate use of prostate screening for preventing premature death; consequently, recommendations of the work group should be revisited when new evidence becomes available.

#### **Reported Complication Rates for Diagnosis and Treatment of Localized Prostate Cancer**

##### *Prostate Biopsy*

- Infection 0.3-5.0 %
- Septicemia 0.6%
- Bleeding 0.1%

##### *Radical Prostatectomy*

- Death 0.2-2.0%
- Impotence 20-85%
- Incontinence 2-27%
- Urethral Stricture 10-18%
- Thromboembolism 10%
- Permanent Rectal Injury 3%

##### *Radiation Therapy*

- Death 0.2-0.5%
- Acute GI or GU Problems 8-43%
- Long Hospital Stay or Surgery 2%
- Impotence 40-67%
- Urethral Stricture 3-8%
- Incontinence 1-2%

Source: USPSTF, 1996.

## **Issue Perception**

### *Disparity*

- Increased prostate cancer mortality among African Americans may be due entirely or in part to barriers to health care access.
- Access to free and low cost screening is not made available to all populations equally, especially those with inability to pay.
- Cultural barriers to screening are likely to exist which have not been characterized and about which the public and providers are unaware.

### *Data*

- Data that measure access to treatment, provider knowledge and practice, and public understanding of prostate cancer are very limited.
- Data describing prostate cancer diagnosis and treatment among minority populations are very limited, especially for persons of Hispanic ethnicity.

### *Education*

- Issues surrounding prostate cancer are complex and difficult for the public to understand, and public education efforts have been inadequate.
- Not all patients who are eligible for screening receive sufficient information to make their own informed decision about whether to accept or reject screening.
- Many providers lack sufficient knowledge of the risks and benefits of screening/treatment to adequately counsel their patients.
- Lack of consistent provision of informed consent before screening may be leading to patient acceptance or refusal of diagnostic tests or treatment based on false assumptions.

### *Diagnosis and Treatment*

- African-American men have lower access to screening and treatment services than other Kansans.
- The opportunity to receive prostate cancer screening is not offered to all men in the age group likely to benefit from early detection.
- Patients lack knowledge of the options available for treatment and recovery.

### *Policy and Resources*

- Equal access to treatment and screening services is not ensured.
- Economic barriers prevent some patients from receiving screening and treatment.

### *Research*

- Many patients lack awareness of available research protocols for secondary prevention or treatment of prostate cancer.

## **Health Objectives – Health Status and Risk Behavior Consensus Objectives**

<b>PC1</b>	<b>By 2010, decrease the percentage of men with prostate cancer who have regional or distant metastasis at the time of diagnosis to below 15%.</b>	
	KS baseline (1996,1997,1998, 1999 Kansas Cancer Registry)	18%
	US Baseline	NA
	Sub1	Race/ethnicity (1996-1999 Kansas Cancer Registry)
	White	18%
	African American	21%
	Hispanic	NA
	Sub2	Population density
	Urban	17%
	Mixed	18%
	Rural	20%
<b>PC3</b>	<b>By 2010, increase the percentage of persons among populations at increased risk for prostate cancer mortality that report access to screening services.</b>	
	Baseline	NA
<b>PC4</b>	<b>By 2010, increase the percentage of men 50 years or older who are aware of the risk for prostate cancer for persons in their age and race group.</b>	
	Baseline	NA
<b>PC5</b>	<b>By 2010, increase the percentage of men 50 years or older who have been counseled by their provider regarding the risks and benefits of early detection and treatment.</b>	
	Baseline	NA
<b>PC6</b>	<b>By 2010, increase the percentage of providers knowledgeable regarding the risks and benefits of early detection and treatment of prostate cancer.</b>	
	Baseline	NA
<b>PC7</b>	<b>By 2010, increase the percentage of providers who routinely counsel their male patients ages 50 and older regarding the risks and benefits of early detection and treatment of prostate cancer.</b>	



Baseline

NA

## Majority Objectives

<b>PC8</b>	<b>By 2010, increase the proportion of men age 50 and older who have had a digital rectal examination within the past two years to greater than 80%.</b>	
	KS baseline (1997 BRFSS)	70%
	US baseline	NA
Sub 1	Population density (1997 BRFSS)	
	Urban	77%
	Mixed	66%
	Rural	66%
Sub 2	Income (1997 BRFSS)	
	<\$20,000	66%
	≥\$20,000	73%
<b>PC9</b>	<b>By 2010, increase the proportion of men age 50 and older who have had a prostate specific antigen test within the two years to greater than 80%.</b>	
	KS baseline (1997 BRFSS)	70%
	US baseline	NA
Sub1	Population density (1997 BRFSS)	
	Urban	79%
	Mixed	61%
	Rural	73%
Sub2	Income (1997 BRFSS)	
	<\$20,000	57%
	≥\$20,000	89%

## **Recommended Actions**

### *Disparity*

- Ensure that patients have equal access to screening and treatment services for prostate cancer, regardless of ability to pay.
- Identify populations with economic barriers to prostate cancer screening and treatment services.

### *Education*

- Through a consensus process, develop up-to-date patient education documents that provide informed consent for early detection and treatment of prostate cancer.
- Identify cultural barriers that may prevent patients from making an informed decision about prostate cancer screening and care.

### *Diagnosis and Treatment*

- Ensure that patients are informed of various treatment and recovery options for prostate cancer once diagnosed.

### *Policy*

- Establish free and low cost screening in geographic areas where men are most likely to lack access to screening services.

## **Resources**

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## SKIN CANCER

As many as 12,000 skin cancers may occur in Kansas each year;<sup>1</sup> 75%-80% of these cancers will be basal cell carcinoma (BCC), 20%-25% squamous cell carcinoma (SCC), and less than 5% will be melanoma. (Murad, Ratner, 2001; Safai, 1997) Skin cancer is predominantly a problem for persons of white race. The racial disparity for skin cancer appears to be related to the damaging effects of solar ultraviolet (UV) radiation on skin that does not have much protective melanin pigment. Skin can be sorted into six classifications based on the propensity of the skin to burn. Most white Kansans who are not Hispanic are expected to have fair skin (type I or II) that burns easily. Persons having these skin types are at greatly increased risk for developing skin cancer when compared to persons with darker skin pigmentation. (Safai, 1997) Lifetime exposure to UV radiation appears to be the most important environmental risk for BCC and SCC, whereas, severe sunburns, especially in childhood, appear to be more important for melanoma. (Adami, et al., 1997)

Although much more common than melanoma skin cancer, BCC and SCC are much less aggressive. (USPSTF, 1996) Most SCC of the skin does not readily metastasize and metastasis of BCC is exceedingly rare; however, if left untreated BCC and SCC can deeply invade into local tissue. (Safai, 1997)

Melanoma is of greater concern. In 1999, 428 cases of invasive melanoma of the skin were reported to the Kansas Cancer Registry. Of these, 43% were diagnosed among persons less than 55 years old, and 12% were diagnosed among persons less than 35 years old. In Kansas, 84 persons died from melanoma in 1999 (compared to 22 deaths due to non-melanoma skin cancers). (Lai, 2000)

Once melanoma has spread beyond the skin, five-year survival rates are poor; fewer than 10% of persons with regional or distant metastasis at diagnosis are alive five years later. (Ries, et al., 1999) The likelihood of the tumor spreading is dependent on how deeply it has penetrated the skin before it is removed. Consequently, early diagnosis and surgical removal of the cancer before it can penetrate deeply offer the best hope for preventing mortality. (Safai, 1997)

Routine screening for skin cancer is recommended by some expert groups. Because melanomas typically appear as dark pigmented lesions among light skinned persons, they are potentially recognizable by skin exam either by a physician or by a patient. Studies suggest that dermatologists performing a skin exam are highly likely to recognize a lesion suspicious for melanoma, although primary care providers appear to be somewhat less proficient. Patients can be taught to recognize a potentially concerning lesion in a substantial percentage of cases, although patients are more likely

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<sup>1</sup>Cancer registries do not collect most occurrences of squamous cell and basal cell carcinoma of the skin, so data are limited. This estimate is based on extrapolation from national data reported in Murad, et al. 2001.

than providers to identify non-malignant lesions as possible melanoma. (USPSTF, 1996)

The screening recommendations of expert advisory groups, as reported by the U.S. Preventive Services Task Force (USPSTF) in 1996, found mixed results. None of the major advisory groups recommend against routine screening by skin examination; however, neither the USPSTF nor the Canadian Task Force on Periodic Health Examination make a recommendation in favor of it. USPSTF cited inadequate data demonstrating cost effectiveness or improved health outcomes resulting from periodic skin exams. The American Cancer Society recommends monthly self exams for all adults, and a physician exam every three years for adults 20 to 39 and annually for adults 40 and over. The American Academy of Family Physicians recommends skin exams for adolescents and adults who have increased sun exposure, a positive family history, or pre-malignant lesions. (USPSTF, 1996) Most panels are in agreement that patients should be educated regarding the risk of sun exposure. Avoiding the sun between 10 am and 3 pm and covering skin with clothing are non-controversial ways of limiting exposure. The regular use of sunscreen is advocated by some, but not by all advisory groups, since the efficacy of sunscreens in preventing skin cancer is unproven. (USPSTF, 1996)

## **Issue Perception**

### *Disparity*

- Although non-white races and Hispanic whites are at greatly reduced risk for developing most skin cancers, reduced access to health care may pose special problems for these populations when skin cancer occurs.
- High rates of skin cancer among whites make it a population with disparate needs. This may be particularly true for whites with low access to health care.

### *Data*

- Basal and squamous cell carcinomas are not reportable to the cancer registry unless occurring on the lip of the face or in the genital area, and melanoma is believed to be substantially under-reported.
- Little data exist regarding the behavioral risk of Kansans for sun exposure and use of UV protective measures.

### *Education*

- Much of the public is either unaware or unconcerned about the risk of UV light exposure.
- Patients do not request their primary provider to perform routine skin examinations.
- Patients have not been taught how to perform a skin exam or recognize skin lesions about which they should consult a physician.
- Many primary care providers are inadequately trained to recognize skin lesions that are suspicious for melanoma.

### *Diagnosis and Treatment*

- Many providers do not incorporate skin examination as part of the routine preventive care procedures.

#### *Policy and Resources*

- Few resources are devoted to reduction of skin cancer mortality in Kansas.

### **Health Objectives - Health Status and Risk Behavior**

<b>SK1</b>	<b>By the year 2010, decrease the age-adjusted mortality due to melanoma skin cancer to 2.6 deaths per 100,000.</b>	
	KS Baseline (1999-2000 CHES mortality files, 2000 standard)	3.1
	US Baseline (1999 NCHS mortality tables, 2000 standard)	2.6
Sub 1	Race/ethnicity (1999-2000 CHES mortality files, 2000 standard)	
	White (including Hispanic)	3.2
	Black (including Hispanic)	NA
Sub 2	Population density baseline (1999-2000 CHES mortality files, 2000 standard)	
	Urban	2.6
	Mixed	3.1
	Rural	4.1
<b>SK2</b>	<b>By the year 2010, decrease the proportion of malignant melanomas of the skin (excluding <i>in situ</i>, excluding unstaged) diagnosed with regional or metastatic spread at diagnosis to 5%.</b>	
	Kansas Baseline (Kansas Cancer Registry, 1996-1999)	10%
	SEER Baseline (SEER, 1989-1995)	13%
	Population density baseline (Kansas Cancer Registry, 1996-1999)	
	Urban	8%
	Mixed	9%
	Rural	16%
<b>SK3</b>	<b>By the year 2010, increase the five year survival for melanoma of the skin.</b>	
	KS Baseline	NA
<b>SK4</b>	<b>By the year 2010, increase the percentage of persons ages 40 and over who report having received a skin exam within the past three years.</b>	

KS Baseline

NA

- SK5**      **By the year 2010, increase the percentage of persons ages 20 to 39 who report having received a skin exam in the past three years.**  
KS Baseline      NA
- SK6**      **By the year 2010, increase the percentage of persons who limit sun exposure, use sunscreen and protective clothing, and avoid sources of artificial UV light.**  
KS Baseline      NA
- SK7**      **By the year 2010, increase the percentage of persons who report ever having been counseled by a physician about UV light exposure.**  
KS Baseline      NA
- SK8**      **By the year 2000, increase the percentage of physicians who counsel or refer persons at genetically high risk for melanoma.**  
KS Baseline      NA

## **Recommended Actions**

### *Data*

- Improve surveillance for skin cancer and skin cancer risk factors.

### *Education*

- Integrate accurate skin cancer risk reduction information into curricula for grades K-12.
- Educate light skinned persons to decrease the number of outdoor activities between 10am and 3pm that place people at risk of UV light exposure.

### *Policy and Resources*

- Identify funding for statewide skin cancer prevention education.

## **References**

Adami HO, Trichopoulos D, Lipworth L, Petridou E. Epidemiology of Cancer. (1997). In DeVita VT Jr., Hellman S, Rosenberg, SA (Eds.) Cancer: Principles & Practice of Oncology (2<sup>nd</sup> ed., pp 231-257). Philadelphia: Lippincott-Raven.

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## END OF LIFE

Despite advances made in prevention, detection and treatment, more than 5000 Kansans die each year from cancer. Most persons who die from cancer can expect to enter a final stage of life when prolongation of survival is no longer realistically possible. During this final stage, efforts are directed toward maintaining activity and function for as long as possible, minimizing complications and controlling symptoms (e.g., preventing pressure sores, controlling pain), and assisting the patient and his or her family to come to emotional and spiritual reconciliation with dying and separation.

A person's expectation of controlling their own body and their own life should not change during this period. Choice of caregivers and settings, level of medical intervention, and management of pain can all be controlled by a patient who has been educated in self-care and given access to the needed resources. After the patient can no longer communicate his or her wishes, care can be managed in accordance with his or her advance directives. Hence, improvements in end-of-life outcomes can be made through increased patient and family education, preparation of advance directives, and provision of adequate social, psychological, and medical resources.

A state-added module added to the BRFSS 2000 survey measured some parameters of quality of life and quality of care for person dying of cancer in Kansas. Six hundred twelve persons (15% of all respondents) who reported having cared for a friend or close family member dying of cancer during the preceding five years were asked questions about the final three months of life of the person for whom they provided care.

Sixty-three percent of respondents reported that the primary health care provider was a cancer specialist for 63% of the patients, for 21% the primary provider was a family practitioner, and for 7% was a general internist. Sixty-seven percent of respondents reported that the medical care the person received was excellent or very good; only 11% reported the care as fair or poor. Ninety-four percent of respondents reported that the patient was prescribed pain medication; however, of these, 32% did not take the medication as prescribed due to cost, side effects or fear of addiction. Two thirds (66%) of respondents reported that the dying person was, on average, in severe or excruciating pain during the last three months of life, and an additional 20% of patients were judged to be in moderate pain.

Eighty percent of respondents reported that the patient spent most of the last three months at home or in a family member's home; ten percent reported that the patient spent most of the last three months in a nursing home. Receipt of hospice care during the last three months of life was reported by 63% of respondents, receipt of psychological or spiritual counseling during the last three months was reported by seventy-six percent of respondents.

The most common complications identified during the last three months were severe fatigue reported among 94% of the patients, and altered mental status reported among 64% of patients. Other common complications identified included loss of bladder and bowel control (59% and 52% respectively), mouth sores (32%) and pressure sores (27%).



## Issue Identification

### *Disparity*

- Hospice services are not fully utilized, especially by low income populations.

### *Data*

- Few data are available to measure quality of life and quality of care among patients dying of cancer.

### *Education*

- Many persons dying of cancer have not prepared end-of-life directives.
- Too few cancer patients receive a hospice referral from their clinical care provider.

### *Recovery and Palliation*

- Cancer pain is not being well controlled for many persons who are dying of cancer.

### *Research*

- Insufficient resources are directed into research for improving the end of life for persons dying of cancer.

## Health Objectives - Health Status and Risk Behavior

**EOL1      Decrease the percentage of Kansans dying of cancer who have severe pain during the last three months of life, as reported by a surrogate, to less than 40%.**

Kansas baseline (2001 BRFSS)

66%

US baseline

NA

**EOL2      Increase the percentage of cancer care providers who encourage patients to prepare end-of-life directives in advance**

KS baseline

NA

**EOL3      Increase the percentage of cancer patients who prepare end-of-life directives.**

KS baseline

NA

## Recommended Actions

### *Education*

- Ensure that all health care providers in the state who care for patients who are dying of cancer receive education to improve the management of pain and other complications, patient-provider communication, use of advance directives, and use of hospice and other palliative services.

### *Policy and Resources*

- Increase state investment at both policy and resource level in solving problems related to the care of patients during the end of life, including pain management and advance directives.
- Increase the percentage of Kansans whose insurance covers pain management medications.

## TECHNICAL NOTES

Race/ethnicity: Three mutually exclusive categories of race/ethnicity (white non-Hispanic, black non-Hispanic, and Hispanic) were used whenever possible. Numbers were not sufficient to permit quantification of risk for other racial or ethnic groups. Data from mortality files, the cancer registry, and hospital discharge do not adequately identify Hispanic ethnicity; consequently, data derived from these sources include Hispanic persons within the racial categories. In most cases, behavior risk data yielded sufficient numbers to permit both racial and ethnic risk stratification.

Age adjustment: All age-adjusted rates use a US 2000 standard.

National comparison data: National cancer incidence rates derived from SEER data are not presented in the document because all available SEER data are age adjusted to 1970 rather than 2000.

ICD coding: Since 1999, mortality data have been coded to ICD-10, whereas hospital data use ICD-9. This creates some discontinuity between disease definitions, since ICD-10 is not backwardly compatible with ICD-9. However, the real impact of this is likely to be small.

### **Kansas Data Sources**

1. **Kansas Cancer Registry (KCR):** The Kansas Cancer Registry is established under state law and regulation to collect information regarding all incident cases of cancer (with some exclusions). The registry releases annual statistical data, and record-level data without identifiers can be obtained for research purposes. Access to confidential data is tightly controlled by law, but may be available for some types of research.

*To contact the registry:*

Registry Director  
KUMC – Department of Preventive Medicine  
3901 Rainbow Blvd.  
Kansas City, KS 66160

2. **Center for Health and Environmental Statistics (CHES):** The Center for Health and Environmental Statistics is one of four divisions of the Kansas Department of Health and Environment. Data management and analysis is under the Office of Health Care Information. Data sets held by CHES that were used for this analysis are the Kansas Mortality Files and Kansas Hospital Association Discharge Data. Statistical data is available over the Internet at [www.kdhe.state.ks.us](http://www.kdhe.state.ks.us). Availability of record level data for research purposes depends on the specific data set requested.

*To contact the Office of Health Care Information:*

Director, Office of Health Care Information  
Center for Health and Environmental Statistics

1000 SW Jackson, Suite 130  
Topeka, KS 66612

3. Behavioral Risk Factor Surveillance System (BRFSS): The BRFSS is the largest continually conducted telephone survey in the world and is managed by the Centers for Disease Control and Prevention. In Kansas, the Behavioral Risk Factor Surveillance Unit of the Bureau of Health Promotion in KDHE conducts the BRFSS statewide as well as conducting other special health surveys. Content of the BRFSS is determined partially by CDC and partially by Kansas. Each year in late summer, a meeting is held for all interested parties to have input into the content of the survey for the following year. Survey data files are available for use.

*To contact the Behavioral Risk Factor Surveillance Unit:*  
BRFSS Coordinator  
Bureau of Health Promotion  
1000 SW Jackson, Suite 230  
Topeka, KS 66612

## **Objective definitions and data sources**

### **BREAST CANCER**

- BR1: Center for Health and Environmental Statistics, KDHE. ICD-10 code C50.
- BR2: ICO-2 code C500-C509, excluding M9590-M9989, excluding *in situ* and stage unknown. Kansas Cancer Registry, KDHE
- BR3: Behavioral Risk Factor Surveillance System. Women ages 50 and older responding that 1) they had ever received a mammogram, and 2) they had ever received a clinical breast exam, excluding unknown or refused for either question.
- BR4: Behavioral Risk Factor Surveillance System. Women ages 40 and older responding that 1) they had ever received a mammogram, and 2) they had ever received a clinical breast exam, excluding unknown or refused for either question.
- BR5: Behavioral Risk Factor Surveillance System. Women ages 50 and older responding that 1) they had ever received a mammogram, 2) the length of time since last mammogram was two years or less, 3) they had ever received a clinical breast exam, and 4) the length of time since the last clinical breast exam was two years or less, excluding unknown or refused for any of the questions.
- BR6: Behavioral Risk Factor Surveillance System. Women ages 40 and older responding that 1) they had ever received a mammogram, 2) the length of time since last mammogram was two years or less, 3) they had ever received a clinical breast exam, and 4) the length of time since the last clinical breast exam was two years or less, excluding unknown or refused for any of the questions.

### **CERVICAL CANCER**

- CX1: Center for Health and Environmental Statistics, KDHE. ICD-10 code C53.

- CX2: Behavioral Risk Factor Surveillance System. Women ages 18 and older who reported 1) they had not had a hysterectomy, 2) they had ever had a pap smear, excluding unknown or refused for either question.
- CX3: Behavioral Risk Factor Surveillance System. Women ages 18 and older who reported 1) they had not had a hysterectomy, 2) they had ever had a pap smear, and 3) the length of time since their last pap smear was two years or less, excluding unknown or refused for any question.

#### COLORECTAL CANCER

- CR1: Center for Health and Environmental Statistics, KDHE. ICD-10 code C18, C19, C20, C26.0.
- CR2: ICO-2 code C180-C189, C199, C209, C260, excluding M9590-M9989, excluding *in situ* and stage unknown. Kansas Cancer Registry, KDHE.
- CR3: Kansas Hospital Association Inpatient Discharges. ICD-9 code 153.0-154.3, 154.8, 159.0.
- CR4: Behavioral Risk Factor Surveillance System. Persons ages 50 and older who reported 1) they had ever used a home kit to test for blood in the stool, 2) the length of time since the last blood stool test was one year or less, 3) they had ever had a sigmoidoscopy or proctoscopy, and 4) the length of time since the sigmoidoscopy or proctoscopy was five years or less, excluding unknown or refused for any question.
- CR5: Behavioral Risk Factor Surveillance System. Persons ages 50 and older who reported 1) they had ever used a home kit to test for blood in the stool, and 2) the length of time since the last blood stool test was one year or less, excluding unknown or refused for either question.
- CR6: Behavioral Risk Factor Surveillance System. Persons ages 50 and older who reported 1) they had ever had a sigmoidoscopy or proctoscopy, and 2) the length of time since the sigmoidoscopy or proctoscopy was five years or less, excluding unknown or refused for either question.
- CR7: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported consuming a total of five or more fruits and vegetables based on responses to a series of questions about frequency of consumption of fruit juice, other fruits, green salad, potatoes other than chips or fries, carrots, and other vegetables, excluding unknown or refused for any question.
- CR8: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported that they have ever been counseled by a doctor or other health care professional about their diet or nutrition, excluding unknown or refused.
- CR9: Behavioral Risk Factor Surveillance System. Persons ages 18 and older with body mass index (weight in kilograms/height in m<sup>2</sup>) greater than or equal to 25 based on self-reported height and weight, excluding unknown or refused for either value.
- CR10: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported that during the past month they had participated in any leisure time physical activity, excluding unknown or refused.

## LUNG CANCER

LC1: Center for Health and Environmental Statistics, KDHE. ICD-10 code C34.

LC2: Kansas Hospital Association Inpatient Discharges. ICD-9 code 162.2-162.9.

LC3: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported that they 1) had smoked at least 100 cigarettes in their entire life, and 2) now smoked everyday or some days, excluding unknown or refused for either question.

LC4: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported that they 1) had smoked at least 100 cigarettes in their entire life, 2) now smoked everyday or some days, 3) identified their race as black, and 4) did not identify themselves as being of Hispanic or Spanish origin, excluding unknown or refused for any question.

LC5: Behavioral Risk Factor Surveillance System. Persons ages 18 and older who reported that they 1) had smoked at least 100 cigarettes in their entire life, 2) now smoked everyday or some days, and 3) identified themselves as being of Hispanic or Spanish origin, excluding unknown or refused for any question.

LC6: Youth Tobacco Survey. Persons in grade 6,7 and 8 who report smoking a cigarette on one or more days during the past 30 days, among all respondents, excluding unknowns/refusals.

LC7: Youth Tobacco Survey. Persons in grade 12 who report smoking a cigarette on one or more days during the past 30 days, among all respondents, excluding unknowns/refusals.

LC8: Kansas Tobacco Survey, 1998. Persons ages 18 and older who reported that 1) they work in a building other than their home, and 2) no smoking allowed inside best describes the smoking policy of their work place, excluding unknown or refused for either question.

## PROSTATE CANCER

PC1: ICO-2 code C619 excluding M9590-M9989, excluding *in situ* and stage unknown. Kansas Cancer Registry, KDHE

PC8: Behavioral Risk Factor Surveillance System. Men ages 50 and older who reported that the length of time since they had a digital rectal exam was two years or less, excluding unknown or refused for either question.

PC9: Behavioral Risk Factor Surveillance System. Men ages 50 and older who reported that 1) they have ever had a prostate specific antigen (PSA) blood test, and 2) the length of time since the last PSA test was two years or less, excluding unknown or refused for either question.

## SKIN CANCER

SK1: Center for Health and Environmental Statistics, KDHE. ICD-10 code C43.

SK2: Kansas Cancer Registry. ICO-2 code C440-C449, excluding M9590-M9989, excluding *in situ* and stage unknown.

## END-OF-LIFE

EOL1: Behavioral Risk Factor Surveillance System. Persons Ages 18 and older who

reported 1) that during the past 5 years they had cared for a friend or close relative who died of cancer, and 2) that on average the pain this person experienced during the last three months of life was severe or excruciating (on a scale of none, mild, moderate, severe, excruciating), excluding unknown or refused for either question.